CLAIMS

[1] An actuator for a pickup, comprising:

a fixed portion;

a movable portion designed to be movable in each of a focusing direction extending along an optical axis of an objective lens and a tracking direction substantially perpendicular to the focusing direction, due to a driving force transmitted from a drive portion, for holding the objective lens; and

a plurality of linear elastic members of five or more each having ends connected to the movable portion and the fixed portion, respectively, wherein

the ends of the plurality of the linear elastic members are located on a virtual circle formed on a plane by being projected onto a plane including both the focusing direction and the tracking direction, and

the virtual circle has a center defined as a rolling center, which coincides with at least one of a center of gravity of the movable portion, a center of a driving force of the movable portion, and a center of translational forces of the linear elastic members.

[2] The actuator for the pickup according to Claim 1, wherein the linear elastic members include six linear elastic members.

[3] An actuator for a pickup, comprising:

a fixed portion;

a movable portion designed to be movable in each of a focusing direction extending along an optical axis of an objective lens and in a tracking direction substantially perpendicular to the focusing direction, due to a driving force transmitted from a drive portion, for holding the objective lens; and

four linear elastic members each having ends connected to the movable portion and the fixed portion, respectively, wherein

the ends of the four linear elastic members are located on a virtual circle formed on a plane by being projected onto a plane including both the focusing direction and the tracking direction,

the ends are linked with one another by line segments constituting substantially a

trapezoidal shape, and

the virtual circle has a center defined as a rolling center, which coincides with at least one of a center of gravity of the movable portion, a center of a driving force of the movable portion, and a center of translational forces of the linear elastic members.

[4] The actuator for the pickup according to Claim 3, wherein

the four linear elastic members are composed of two linear elastic members linked with each other by a line segment constituting an upper base of the trapezoidal shape, and two linear elastic members linked with each other by a line segment constituting a lower base of the trapezoidal shape, and

the former two linear elastic members are different in cross-sectional area from the latter two linear elastic members.

[5] The actuator for the pickup according to Claim 4, wherein the two linear elastic members linked with each other by the line segment constituting the upper base of the trapezoidal shape are different in cross-sectional width dimension from the two linear elastic members linked with each other by the line segment constituting the lower base of the trapezoidal shape.

[6] The actuator for the pickup according to Claim 3, wherein

the four linear elastic members are composed of the two linear elastic members linked with each other by the line segment constituting an upper base of the trapezoidal shape and the two linear elastic members linked with each other by the line segment constituting a lower base of the trapezoidal shape, and

the former two linear elastic members are different in modulus of elasticity from the latter two linear elastic members.

[7] A pickup device, comprising:

the actuator for the pickup according to any one of Claims 1 to 6; and

an actuator drive portion for driving the actuator for the pickup.

[8] A recording medium drive device, comprising:

the pickup device according to Claim 7.

[9] A method of producing an actuator for a pickup including: a fixed portion; a

movable portion designed to be movable in each of a focusing direction extending along an optical axis of an objective lens and a tracking direction substantially perpendicular to the focusing direction, to hold the objective lens; and a plurality of linear elastic members of five or more each having ends connected to the movable portion and the fixed portion, respectively,

the method, comprising:

locating the ends of the plurality of the linear elastic members on a virtual circle formed on a plane by being projected onto a plane including both the focusing direction and the tracking direction, respectively; and

making at least one of a center of gravity of the movable portion, a center of a driving force of the movable portion, and a center of translational forces of the linear elastic members coincide with a center of the virtual circle defined as a rolling center.

[10] A method of producing an actuator for a pickup including: a fixed portion; a movable portion designed to be movable in each of a focusing direction extending along an optical axis of an objective lens and a tracking direction substantially perpendicular to the focusing direction, to hold the objective lens; and four linear elastic members each having ends connected to the movable portion and the fixed portion, respectively,

the method, comprising:

locating the ends of the four linear elastic members on a virtual circle formed on a plane by being projected onto a plane including both the focusing direction and the tracking direction;

ensuring that line segments linking the ends with one another assume substantially a trapezoidal shape; and

making at least one of a center of gravity of the movable portion, a center of a driving force of the movable portion, and a center of translational forces of the linear elastic members coincide with a center of the virtual circle defined as a rolling center.

[11] The method of producing the actuator for the pickup according to Claim 9 or 10, further comprising:

installing the linear elastic members in a mold for molding the fixed portion and

the movable portion; and

insert-molding the actuator for the pickup through injection of a molten resin from an injection port of the mold.